

REMARKS

Claims Rejections - 35 USC §112 Second Paragraph

The Office rejected Claims 14 – 20 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. A §112 second paragraph rejection has two separate requirements, indefiniteness and failing to claim what applicant regards as the invention. With respect to indefiniteness, the "essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of (1) the content of the particular disclosure, (2) the teachings of the prior art, and (3) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made." (MPEP §2173.02).

In particular, the Office cites as indefinite the phrase “linearly constrained”. The applicant notes that this term is utilized in the specification, and in the context of the specification is clearly articulated. Cf. paras 65-67, 69-72. “Linear constraint” is used to indicate the constraint of localized measurement data to an *a priori*, known target path using a linear ratio of the respective distances between a measured data point and two proximate way points disposed on the target path. The applicant submits that this is consistent with the above cited paragraphs and is illustrated in Figure 8C where the linearly constrained measurement 855 is a function of distances D1 and D2, the distances between the actual measurement 850 and way points 805 on the *a priori* known target path 810.

The applicant respectfully submits that this cures this rejection. The applicant respectfully request that the office withdraw its rejection based on 35 USC 112.

Claim Rejections – 35 USC § 103

The Office has quoted the statute from 35 USC 103(a), which is referenced herein. The Office has rejected claim 14-20 as being unpatentable over US Patent No. 5,045,860 issued to Hodson in view of other references. Applicant has carefully considered the Office rejections and respectfully submits that the amended claims, as supported by the arguments herein, are distinguishable from the cited reference.

According to the MPEP §2143.01, "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found in either the references themselves or in the knowledge generally available to one of ordinary skill in the art."

A useful presentation for the proper standard for determining obviousness under 35 USC §103(a) can be illustrated as follows:

1. Determining the scope and contents of the prior art;
2. Ascertaining the differences between the prior art and the claims at issue;
3. Resolving the level of ordinary skill in the pertinent art; and
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

The Office rejected Claim 14 under 35 USC 103(a) as being unpatentable over the '860 reference in view of US Patent No. 5,433,337 to Gilbert. The Applicant has carefully reviewed the cited references and respectfully disagrees.

Claim 14. A system for tracking at least one mobile target in a region along an *a priori* known target path having way-points, comprising:
a plurality of sensors deployed in the region, wherein said sensors detect said mobile target disposed upon said *a priori* known target path having way points;
a first processing section that receives target data from said sensors and processes target localization information;

a second processing section wherein said target localization information is **linearly constrained** and generates a **regional measurement** consistent with said **waypoints disposed upon said *a priori* known target path**; and
a third processing section that filters said regional measurement and generates a filtered target position.

In contrast to the claimed invention, the applicant respectfully submits that the cited '860 reference fails to disclose an *a priori*, known, target path, or waypoints disposed upon that path. The '860 reference discloses a method for identifying areas on a grid coordinate system having local probability maxima where the target would likely be located. There is no predefined or *a priori* known path upon which the target is traveling, and consequently no line to which to constrain the data. The example used by the '860 reference is a ship at sea, a prototypical example of a target unconstrained by *a priori* paths. The '860 reference utilizes measured bearing lines (LOBs) to generate probability densities where the target ship is likely to be located. The Office cited Col. 11, l. 41. The applicant notes that this line describes a distribution that is not linearly constrained to an *a priori*, known path, but instead a "global probability values" and is displayed as "a pattern of discrete probability regions". Figure 4-7 are examples of global probabilities displayed in such a fashion. While Col. 13, ll. 36-40 refer to embodiments where operators derived from collateral data, "e.g. known preferred sea routes", this information is used to effect a non-analytical constraining used to differentiate between probability maxima and select the maximum that is target. Without an *a priori* known target path, there can be no way points. Without way points and a target path, there can be no regional measurement, as the regional measurement of the claimed invention is a ratio of the distances between two way points and an actual measurement, linearly constrained to the target path.

The system of the '860 reference is thus fundamentally different from that of the claimed invention of claim 14, a system for locating a target along a known path having reference points identified upon the path, i.e. way points. These way points, define regions or line segments on the known path within which the target is located. The actual measured bearing obtained by the

system of the claimed invention is linearly constrained to a location within the region thus defined by way points, after which additional processing may be done. This reduces error prior to filtering, rather than having to correct error in a filtered number, as in Col 13, ll. 36-40 of the '860 reference.

The Office correctly notes that the '860 reference fails to disclose a "a third processing section that filters said regional measurement and generates a filtered target position." The Office cites the '758 reference supply this absence of a third processing section for filtering and generating a filtered target position. The applicant has carefully reviewed the cited reference and respectfully disagrees.

First, the applicant respectfully disagrees the Office's allegation that '758 reference relates to the same field of endeavor as the claimed invention. The '758 reference relates to a specific application- magnetic field source tracking. Consequently, aspects of the system discussed in the '758 reference would render it in applicable to the claimed invention. In particular, the '758 reference relies on successive iterations of the system to obtain accuracy See Col. 3, ll. 27-34. The system of the claimed invention seeks to optimize accuracy in a single step, important in the military applications for which the claimed invention was designed.

Further, the '758 reference fails to disclose those elements noted by the applicant as being absent from the '860 reference, *inter alia*, a known target path; way points; a second processor for linear constraint; and regional measurements of the target location on the known target path. The '758 seeks to minimize error in comparison to a hypothetical or predicted, rather than an *a priori* known, target path. (Col. 14, ll. 40-46) The Office cites Figure 4 and Col 14, ll 29 as disclosing a target path. While the Toyota Celica of that example does travel along a path, that path is not disclosed as being known *a priori*, indeed Figure 4 is a graph of dipole moment snapshots of the Celica plotted on the same grid as the perturbation method of the '758 reference. Simply put, no *a priori* path is disclosed. As noted above, without a known path and way points one cannot obtain linear constraints or regional measurements.

At least for the above reasons, the applicant respectfully submits that the invention of claim 14 is not rendered obvious in light of the '860 reference in combination with the '758 reference. The applicant respectfully requests that the Office withdraw its rejection of this claim, and claims 15-20, which depend therefrom. The applicant respectfully submits that as claims 15-20 are dependant from claim 14 and as claim 14 is not unpatentable in light of the alleged combination of the '860 and 758 reference, claims 15-20 are likewise not unpatentable in light of the cited references.

Applicant believes the above amendments and remarks to be fully responsive to the Office Action, thereby placing this application in condition for allowance. No new matter is added. Applicant requests speedy reconsideration, and further requests that Examiner contact its attorney by telephone, facsimile, or email for quickest resolution, if there are any remaining issues.

Respectfully submitted,

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